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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,485	02/18/2004	Chuan-Chu Chen	250210-1050	3102

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THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP
100 GALLERIA PARKWAY, NW
STE 1750
ATLANTA, GA 30339-5948

EXAMINER	
LIE, ANGELA M	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/781,485	CHEN, CHUAN-CHU	
	Examiner	Art Unit	
	Angela M. Lie	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Backs et al (US 6531833).

As to claim 1, Backs et al discloses a driving circuit comprising: a current transformer (Figure 4, elements 18, 22 and 20) having at least a primary winding (Figure 4 element 18) and a secondary winding (Figure 4 element 20), the primary winding (18) coupling to the AC device (Figure 4 element 24, AC device is alternating current supply), and the device transmitting the AC current to the primary winding (as shown in figure 4, elements 24 and 18), such that the secondary winding generating an induced current (since elements 18 and 20 are electromagnetically coupled as shown in figure 4 (transformer), the current is induced in the secondary winding (20)); and an induced impedance (Figure 4 element 42), connected with secondary winding in parallel (as shown in figure 4, elements 20 and 42), for generating an induced voltage according to the induced current (it is inherent feature that once current flows trough the resistor it will produce the voltage (V = I*R), since there is the resistor (42) and there the induced

current, therefore the circuit is capable of producing induced voltage), wherein the load is connected with the induced impedance in parallel (as shown in figure 4, elements 42 and 12).

As to claim 3, Backs et al discloses the driving circuit wherein the induced impedance is a resistor (Figure 4 element 42).

As to claim 5, Backs et al discloses the driving circuit wherein the load is an illumination device (Figure 4 element 12, illumination in other words is a visible radiation, therefore the discharge lamp is considered to be also the illumination device, because ionized particles emit energy in the form of visible wavelengths i.e. 0.38 – 0.76 micrometer).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Backs et al (US 6531833). Backs et al disclose all the limitations presented in claim 5, they do not explicitly state that the illumination device is an electroluminescent lamp, however it is well know in the art that electroluminescent lamp is one of the commercially available source of light, therefore it would be obvious to use it as a second load.

5. Claims 2, 7-9, 11-17 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Backs et al (US 6531833) in the view of Knoble (US 515165).

As to claims 7 and 14, Backs et al disclose an electronic device comprising: an AC driving unit for generating an AC current to drive the first load (Figure 4 element 24); a current transformer having a primary winding (Figure 4 element 18) and a secondary winding (Figure 4 element 20), wherein the primary winding (18) is coupled between the first load (22) and the AC driving unit (24), such that the secondary winding generates an induced current (once element 24 supplies AC current, the first coil (18) will induce current in the secondary coil (20) because the device shown in figure 4 elements 18,22 and 20, is a transformer), a second load (Figure 4 element 12) an illumination function (this is explained in justification for rejection of claim 4), wherein brightness of the second load is changed according to an AC driving voltage and wherein brightness of the second load corresponds to an operating duration of the first load (since the level of the discharge depends on the power supplied to the device in order to ionize particles, it is inherent that according to the change in AC driving voltage, the brightness of the second load will also vary, since first load is in between second load and the AC supply unit (24) it is also inherent that operating duration of the first load affects second load and more particularly it affects its brightness as explained above); a transformation device, (Figure 4 element 34, the transformation device comprises a resistor, therefore if current flows through it, it can produce a voltage), connected with the secondary winding (as shown in figure 4, elements 20 and 34) and the second load in parallel (as shown in figure 4 elements 34 and 12), for transforming the induced current to the AC driving voltage to drive the second load (since transforming circuit 34 comprises a resistor, this circuit is capable of transforming induced current to the AC driving voltage

satisfying basic laws of physics i.e. V= I*R). Backs et al do not teach however a first load wherein a current flowing on the first load is reduced as time increased. Knoble teaches the first load placed between AC current supply and the first winding of the transformer. The circuit taught by Knoble is capable of reducing current on the first load as time increases, because once AC current supply is supplying less current; it will have direct influence on the first load. It would have been obvious to one of the ordinary skill in the art during the time when the invention was made to place the first load between AC current supply and the first winding of the transformer as taught by Knoble, because this could be used as an indicator to determine if the supplied power is stable or not, furthermore if the first load would be a light bulb, it could be used as a secondary source of light so in case when second load would not work, there still would be light emitted from the first load so the system would be robust.

As to claims 2, 8 and 19, Backs et al and Knoble teach all the limitations presented in claim 1, 7 and 14. Knoble teaches a transformer having smaller number of coils on the first winding than the number of coils on the second winding. It would have been obvious to one of the ordinary skill in the art during the time when the invention was made to incorporate Knoble's teaching about having less coils on the first winding than the number of coils on the second winding because with this solution according to the basic equation for transformers i.e.V2 = V1*(N2/N1) where V2 is the voltage on the secondary winding and V1 is the voltage on the first winding, and N2 and N1 are number of coils on second and first winding respectively. From this dependence one skilled in the art can conclude that if number of coils on first winding is smaller than the

number of coils on the second winding, it would produce higher voltage on the second side. This is desired feature because this voltage can charge capacitor (42) in the faster rate and this will prevent light from flickering (i.e. capacitor can provide additional voltage to the second load in case AC current supply fluctuates).

As to claim 9, Backs et al disclose the electronic device wherein the transformation device comprises impedance (Figure 4 elements 34 and 42).

As to claims 11 and 16, Backs et al and Knoble do not teach that the driving circuit is used in video projector, however it is well known in the art that all video projectors have some sort of driving circuit delivering the power to the load which in case of projector is a bulb or lamp. Therefore it would be obvious to use the circuit as described in claim 7 or 14 in the video projector.

As to claims 12 and 17, Backs et al and Knoble teach all the limitations presented in claim 7, Knoble also teaches that first load if an AC lamp (Figure 1 element 10, the advantages of inserting the first load into the driving circuit taught by Backs et al, are listed in the justification for rejection of claim 7).

As to claims 13 and 18, Backs et al and Knoble teach all the limitations presented in claims 7 and 14. They do not explicitly state that the illumination device is an electroluminescent lamp, however it is well know in the art that electroluminescent lamp is one of the commercially available source of light, therefore it would be obvious to use it as a second load.

As to claim 15, Backs et al disclose the electronic device wherein a current flowing on the first load becomes smaller and brightness of the second load is reduced

over time (the circuit described by Backs et al is capable reducing current flowing through the first load if the AC current supply is regulated to do so, and once it happens there will be less power provided to the second load, which in result will reduce ionization and produce less discharge and finally reduce brightness).

6. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Backs et al (US 6531833) in the view of Beeman et al (US 4590600). Backs et al disclose all the limitations in claims 1 and 9; they do not teach however that the driving circuit further comprising a low-pass filter connected with the secondary winding in parallel. Beeman et al teach a circuit in which they connect low pass filter to the second winding of the transformer. It would have been obvious to one of the ordinary skill in the art during the time when the invention was made to place low pass filter as suggested by Beeman et al, into the driving circuit as described by Backs et al, because low pass filter removes the high frequency interference (column 6 lines 1-4). It known fact for ones skilled in the art that high frequency signals cause high vibration, which can result in overheating of elements, and this is undesired effect.

The Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 4390813 discloses transformer for driving an amplifier
- US 5892336 discloses circuit of r energizing cathode fluorescent lamps
- US 5572093 discloses circuit for regulating intensity and repetition of the pulse

- US 5548189 discloses a fluorescent lamp excitation circuit
- US 6028398 discloses a cold cathode fluorescent lamp driving apparatus.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela M. Lie whose telephone number is 571-272-8445. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Don Wong
Supervisory Patent Examiner
Technology Center 2800